



جامعة صنعاء
كلية الطب والعلوم الصحية
دفعه بصمة طبيب 31
طب بشري

ophthalmology

UVEAL TRACT

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اللجنة العلمية لدفعه بصمة طبيب 31

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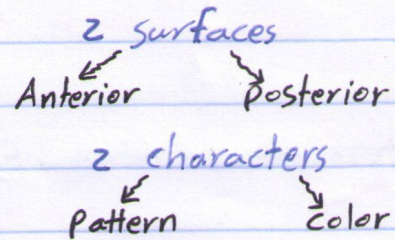
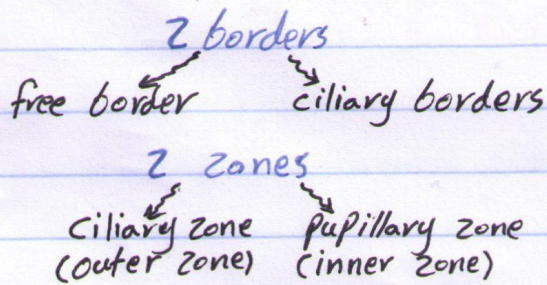
Uveal Tract

D:- It's The pigmented vasculo-muscular coat of The eye ball.
Other names are: uvea, uveal Tract, Tunica vasculosa bulbi,
Vascular coat of the eye.

It composed of:- iris, ciliary body & choroid.

Iris

It's an circular colored diaphragm, stretching across The anterior part of the eye. Divided the space between the cornea & the lens into two ant. & post. chambers. It's perforated at its center by an aperture called pupil.



* Iris هي الطبقة الملونة في العين وهو بسبب وجود melanocyte وأختلاف الألوان هو بسبب أختلاف تركيز melanocyte الذي يحدد درجة امتصاص الضوء.

* The Iris composed of 4 layers:-

1 Anterior border: single layer of intermingling of fibroblast, absent over the crypts, continuous with the endothelium of the cornea.

2 stroma: contain melanocyte, But ~~not~~

3 plain muscles: sphincter pupillae muscle (around the pupillary margin)
dilator pupillae muscle (at the root of the iris)

4 posterior epithelium: continuous with the epithelium of the ciliary body.

* Functions of The Iris:-

1 control the amount of the light

2 Increase depth of focus

3 constriction of the pupil stretched the trabecular meshwork → enhance aqueous ↑ ^{drainage}

Q:- What's the functions of pupil? ↑↑

The ciliary body

The ciliary body is the intermediate part of the uveal tract. It extends from the root of the iris to the anterior part of the choroid at the ora serrata.

* Ciliary muscles:-

1) The circular fibers:- responsible for accommodation to near vision

2) The longitudinal fibers:- responsible for the aqueous drainage

* Ciliary body has two parts:- contraction $\rightarrow$ opening of the canal of schlemm.

- The pars plicata:- highly vascular & responsible for secretion of the aqueous humor.

- The pars plana:- composed of avascular stroma.

* Pars Plana هي أهم منطقة للجراحين لأنها، غالباً من هذه المنطقة يخرج الماء في حالة جراحات العين.

* Function of the Ciliary Body:-

1) ~~formation~~ secretion of the aqueous humor

ولها دور مهم في الرؤية بالقرية

2) support lens by zonular fibers (ligamentary zonules)

3) Accommodation:-

ciliary Relax
 $\uparrow$ Tension in zonules
 $\downarrow$ concavity
 $\downarrow$ Refractive power

ciliary contract
 $\downarrow$ tension in zonules
 $\uparrow$ concavity
 $\uparrow$ Refractive power

يزداد قوة انحناء للعدسة
 $\downarrow$
يزداد قوة الانكسار
 $\downarrow$
تنعكس الصورة في retina

لأنها لو لم تزداد في الانكسار، تنعكس الصورة في خلف retina وهذا يشكل مشكلة موجودة

في كبار السن $\Rightarrow$ $\uparrow$ age $\rightarrow$ $\uparrow$ cells dehydration
 $\leftarrow$ sclerosis وتصلب الجزء من nucleus

• غير قادر على accommodation

Q:- What are The Intra-ocular muscles?

1) iris muscles (sphincter & dilator pupillae m.)

2) Ciliary muscles (longitudinal, circular & radial fibers)

The Choroid

It extends from The optic disc to ora serrata.

It's The posterior part of the uveal tract, Brown in color.

Highly vascular.

* It's main function is nutrition of the retina & support it.
& absorbs unnecessary light.

* لا يوجد Pain nerve ending في choroid لذلك في حال جعل التهاب (Choroiditis) لا يوجد Pain أما لو جعل التهاب في ال (iris or CB) تكونه painful لذلك ال (Iridocyclitis) في D.D. ال (Painfull Red eye)

* The choriocapillaries supply the outer 5 layers of the Retina.

→ It form from the outer large & middle Intermediate & inner small BV

Diseases of The uveal tracts

I Congenital Anomalies:-

1- Colobams:- missing part of iris.

2- Albinism:- ↓ melanin in melanocyte (The number of melanocyte is normal)
high Red eye reflex in examination, & photophobia

* لأنه ما فيه (melanin) يجب ان يكونه ال reflex غير مرتفع

3- aniridia:- absence of the iris.

4- anisocoria:- فرق بينه ال pupil بين العينين، واحدة كبيرة واحدة صغيرة

5- ToxH Infection: I due to Infection by toxoplasmoses or rubela

II Trauma:-

- Iris prolapsed:- It's herniation of iris through traumatic tear in the limbus & cornea.

* it's defense mechanism to seal the tear & reform A.C by the aqueous.

* تقوم ال iris بـ الحفظة أو الختم بعمل ال negative pressure وهذه الحالة يجب عمل عمليات جراحية مستعجلة وبها ذلك ننبهت عنه السبب ونشوف وضع ال lens و I.v

- iridodialysis:- blunt trauma lead to iris dissolution ~~تفصل ال iris كالحل~~

* تتفصل ال iris بشكل كامل منه عنه ال root ويكونه ال D shap pupil

- choroidal rupture or hemorrhage ~~مسر المنزقي هو ال choroid~~

- heterochromia in siderosis * لو دخل حديد داخل العين ويحدث تغير في لونه العين

- uveitis:- * بمجرد حدوث Trauma تصل عي إطلاق ال IFL mediator وتودي إى <=

* في حالة يكون الجسم الغريب غشبي قد يؤدي الى Fungal Inf.

3] INFLAMMATION:-

A - Infectious:- Viral, Bacterial or parasitic.

- Iritis, iridocyclitis (Anterior uveitis)
- Choroiditis (Posterior uveitis)
- panuveitis (Iridocyclitis & choroiditis)

B - Autoimmune / systemic

* تحصل في الجسم نفسه التهاب. فراجع الى Inflammation exudative & fibrosis الذي قد يؤدي الى التصاق الiris بالcornea أو الiris بالlens وقد يؤدي الى Retinal detachment وتعالج بالsteroid و أحياناً I.O injection و steroid.

4] Tumors:- The most common intraocular tumor in adults is ↓
The malignant melanoma وهو يعتبر Life threatening

5] Degenerative disease:-

- pseudoxfoliation syndrome of the iris → glaucoma
- myopia - chorioretinal degeneration → scotoma
- Lattice degeneration → Retinal Detachment

سببها axial myo. وهي نادرة (1%) من حالات ال myopia وتعالج بنقطة

- cry to Inflammation disease - بإستخدام المنظار
- Retinal disorders as retinitis pigmentosa.

ال Inflamm. وال Retinal disorders قد تنتهي ب Degeneration

uveitis

* Classification:-

1] Anatomical:- Anterior: iritis ± cyclitis •

- Intermediated: cyclitis •

- Posterior: choroiditis ± retinitis •

- Pan uveitis eg: sympathetic uveitis, Behce's disease

2] Clinical:- Acute, subacute, chronic, recurrent, complicated.

3] Pathological:- Non granulomatous / Granulomatous.

* Etiological:- Exogenous or endogenous.

1. Idiopathic وهو الأغلب كقاعه

* الـ Posterior أغلبها Infection والـ Anterior أغلبها أسبابها Idiopathic أو

2. Traumatic :- (blunt, penetrating, surgical, FB) Auto Immune.

3. Infectious:- (Viral, Bacterial, Fungal, TB, sarcoidosis, Leprosy)
Protozoal (toxoplasmosis), Parasitic (toxocarisis).

موجوده في المغرب بشكل أوسع بسبب إقامتهم بالبلاد

4. Local disease :- - Iriditis • Steroid يجب أنه أعطى المريض

- RD • Iris Inflammation في iris

- Lens → بسبب خروج البروتين منها

يحل Aut... Inf. فدهنا البروتين لانته غير معروف منه الجسم

5. Systemic disease:-

HCA related Behcet's, sarcoidosis, GIT diseases (UC)

Skin diseases as psoriasis.

- يجب أحياناً في حالة الـ Uveitis تحمل المريض لقسم الباطنة لعمل عدة فحوصات

خصوصاً قبل إستخدام الـ steroid.

- كما وأيضاً العكس مثلاً في حالة الـ UC قد يشك دكتور الباطنة بوجود Uveitis

في بداية مراحله.

6. Masquerade syndrome:- Uveitis as response to hidden Iry or cry tumors, FB inside the eye, Retinal Detachment.

* Clinical Picture of the Anterior uveitis:-

+ symptoms →

- Painful Red eye

- Photophobia

- Headache

- Reflex tearing

- Pain (dull ache in eye)

- Floaters in V. Field

Signs →

- Ciliary Injection

- cell & Flare in AC

(slit lamp)

- turbid aqueous

- irregular Fixed pupil

- ant/post. synechia

Q:- what's the sure sign of active iridocyclitis? - hyphema & hyphemia

Inflammatory cells & Flare in the aqueous

سبب الـ Inflamm. لها حل في iris → ↑ permeability ← خروج البروتينات منه الـ iris وتجميع

Q: Cause of hyphema in iridocyclitis? or causes of hemorrhagic?

1- Trauma

2- TB

3- DM

4 viral

* D.D of Anterior uveitis: ↓

- acute glaucoma
- keratitis
- severe acute conjunctivitis

Q: Cases of pinfull Red eye?

- Acute congestive glaucoma
- Acute Anterior uveitis
- corneal ulcer
- injury.
- End/panophthalmitis
- Acute conjunctivitis
- Acute scleritis

* uveitis sequelae -

Anterior ↓

- Painfull red eye
- hypopyon
- ↓ VF
- Cataract
- glaucoma
- synechia

posterior: ↓

- painless
- floaters in VF
- loss of part of the field
- loss of vision
- retinal detachment
- optic atrophy
- cyclitic membrane

Q: Types of synchia?

- 1- localized synchia.
- 2- Ring synchia

3- occlusion synchia.

4- Total synchia.

Q: what's cyclitic membrane?

It's organized exudate behind the lens, when the ciliary body pour it's exudate (Fibrous membrane) in the retro-lental spaces forming membrane → keratocoria.

* clinical picture of the posterior uveitis :- (choroiditis)

- No pain
- ↓ V. Acuity
- ↓ V. Field
- floaters
- Retinal symptoms :-
(photopsia, macropsia, metamorphopsia, micropsia).

* Signs by slit lamp with lenses or ophthalmoscope :-

- vitreous cell
- exudates
- Vasculitis (BV-sheathing)
- pigmentations (retinitis)
- neovascularisation → bleeding
- Fibrosis → RD or neuritis → optic atrophy.

* systemic associated uveitis :-

- | | |
|---------------------------|-----------------------|
| 1- Reiters disease . | 2- Behcet's disease . |
| 3- Vogt Koyanagi Harada . | 4- Toxoplasmosis . |

1) Reiter's disease :-

A triad of urethritis, conjunctivitis & seronegative arthritis

C.P :-

- Arthritis
- Entheses (Planter fascitis, Achilles tendonitis & calcaneal periostitis)
- Extra articular Features
- ocular Features :- conjunctivitis, Iritis, keratitis.

2) Behcet's Diseases :-

multisystemic affect due to HLA B5 + young age.

- C.P :-
- | | |
|-----------------------------|----------------------------|
| 1- Recurrent oral ulcer | 2- Recurrent genital ulcer |
| 3- Recurrent iridocyclitis. | |

- Ocular features of Behcet's disease

- recurrent acute iritis
- chronic iridocyclitis
- retinal vasculitis
- vitritis
- retinal hemorrhage
- macular edema
- ischemic optic neuropathy

3] Vogt Koyanagi Harada syndrome (VKH)

It's an idiopathic multisystemic disorder - autoimmune.
due to HLA DR4 & DW15

- C.P:-

- 1- skin & hair:- Alopecia, Poliosis, Vitiligo
- 2- CNS:- Irritation, Encephalopathy, Auditory symptom, Cerebrospinal Fluid lymphocytosis.

- ocular features:-

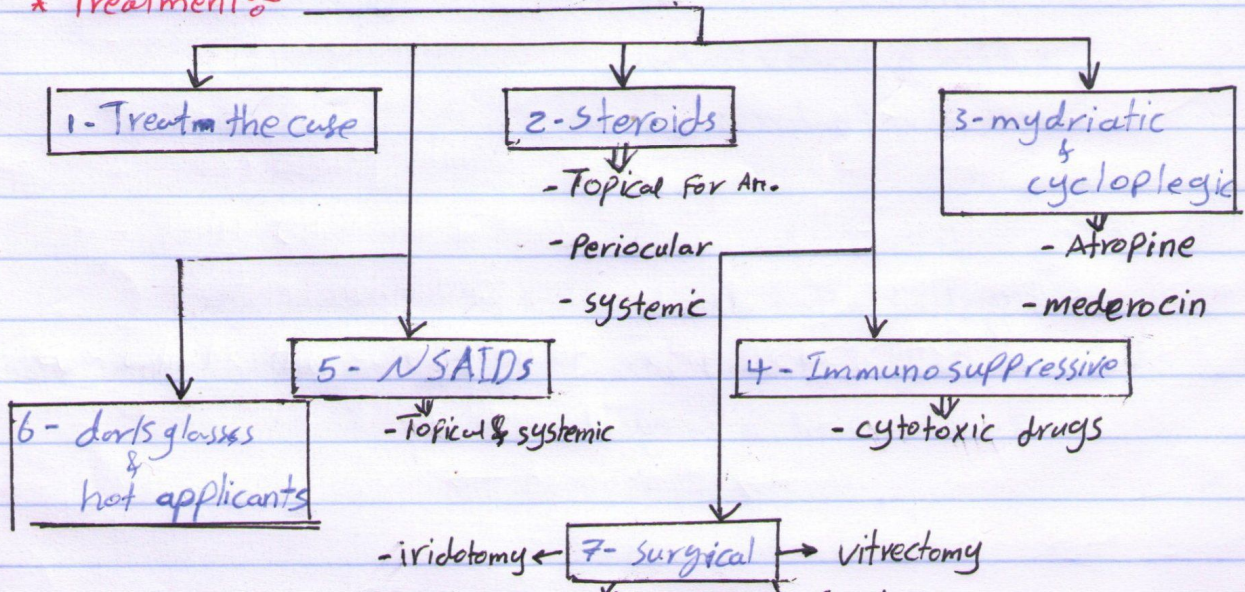
- 1- chronic granulomatous iridocyclitis.
- 2- multifocal choroiditis.
- 3- R sensory R D.

4] Toxoplasmosis:-

ways of Infection:-

- 1- Ingestion of uncooked meat (bradyzoites).
- 2- Ingestion of sporocytes from dirty pica.
- 3- Transplacental spread (tachyzoites)

* Treatment:-



Q:- Side effects of topical steroid?

- 2nd glaucoma
- 2ry cataract
- Corneal complication
- Bacteria, viral & Fungal overgrowth
- delayed wound healing

* Systemic dose of steroid is 1mg/kg on 3 divided doses.

gastroitis or PU $\rightarrow$ 1-Ranitidine $\rightarrow$ 2- omeprazole

2- Diabetogenic

3- Salt & water retention $\Rightarrow$ CHF

4- osteoporosis

Q:- Side effects of Atropine:-

- 1- Hypersensitivity: edema of the lids & conjunctiva & Flushing of face & skin
- 2- Vomiting & delirium: so in children ointment is used not the drops
- 3- In shallow AC eye: Atropine may induce acute closed angle glaucoma so Atropine is CI.

Note:- steroid works as:-

- 1- anti inflammatory
- 2- anti edematous
- 3- anti-fibroblast
- 4- anti-allergic

